



INTEGRATING ICT IN INDIAN EDUCATION SYSTEM: AN OVERVIEW OF NEW NATIONAL EDUCATION POLICY – 2016

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ABSTRACT

The Indian Education system is moving forward through various ways and in this transformative process, a new addition has already approved, which is called new 'National Policy on Education – 2016.' The focus of the new National Policy on Education is on improving the quality of education and restoring its credibility. It seeks to create conditions to improve the quality of teaching, learning and assessment, and promote transparency in the management of education.

New technologies have emerged and new knowledge's are being generated at a rapid pace. Major developments of ICT in recent decades have brought in new dimensions in the fields of transmission of data, and use of ICT as a vehicle for monitoring and management, among others. The Government of India has launched several initiatives such as Swachh Bharat Abhiyan, Digital India, and Smart Schools, etc. The new policy emphasized and suggested to integrate and implement ICT in a variety of ways and means in our education system.

This study is purely qualitative in nature and the documentary analysis method applied by the researcher. So that we shall purposefully selected the related policy documents made by the governments as primary sources. The main objectives of the study are to understand the central phenomena of the new National Policy of Education – 2016 and to make a critical observation of the changing outlooks towards integrating ICT in Indian education system as highlighted in that policy documents.

KEY WORDS: New education policy, Digital India, ICT, Quality education.

INTRODUCTION:

The Indian Education system is among the largest in the world in a variety of ways, like number of students, number of teachers, number of institutions, etc. Though there is different types of diversification exist in our society, but inspite of that, our country moving forward through the timely reformation of her education system properly. In this transformative process, a new addition has already approved by our central Government, which is called 'New National Policy on Education – 2016.' This is being formulated nearly after three decades since the last National Policy of Education (1986) implemented in our country. It recognizes the criticality of Education as the most important vehicle for social, economic and political transformation. It reiterates the role of education in inculcating values, and to provide skills and competencies for the citizens, and in enabling him to contribute to the nation's well-being; strengthens democracy by empowering citizens; acts as an integrative force in society, and fosters social cohesion and national identity.

Objectives of study: The main objectives of the study are:

- To understand the perspectives towards formulation of the new National Policy of Education – 2016.
- To make a critical observation of the changing concept of ICT in Indian education system as highlighted in this policy documents.

Research Questions: The following research questions formulated for conducting the study -

- (1) What was the main focus of the new National Policy of Education- 2016 ?
- (2) How the concept of ICT took a greater shape as reflected in that policy documents?
- (3) What measures taken by the policy makers for proper integration of ICT in our education system ?

METHODOLOGY OF THIS STUDY:

This study is purely qualitative in nature and documentary analysis method applied by the researcher. So that we shall purposefully selected the related policy documents made by the governments and other apex bodies as primary sources. We shall try to critically highlight the major issues regarding the theme as enlightened in that policy documents, as like, uses and application of ICT in education, role of ICT as aid to the teacher in the classroom, contribution of ICT to aid in remedial education, ICT for use in training of teachers and use of ICT for 'big-data' as a management and governance tool, through which our country should entered in a 'Digital World' in near future.

Perspectives of new National Policy on Education (2016):

It is an established fact that an education system built on the premises of quality and equity to sustainable success in the emerging knowledge economy. Education is a powerful tool for preparing our citizens in the knowledge society. It can amalgamate globalization with localization. The Government of India has launched several social and developmental initiatives such as Swachh Bharat Abhiyan, Digital India, Skill India, Make in India and Smart Schools, etc. All these initiatives have significant linkages with the education sector which has taken into account in the new NPE. For example, the integration of ICT also underlines the imperative necessity of providing electricity and connectivity, and making computer hardware, software and technical support available in every school, especially in rural areas. New technologies and disciplines have emerged and new knowledge and insights are being generated at a rapid pace. Individuals, societies, governments and educational and other systems are often behind the curve in keeping pace with these developments.

Right to Education was recognized by the United Nations as fundamental to man - indeed as the United Nation was being established, India had argued vehemently in favour of education as a fundamental right. The 1968 and 1986-1992 National Education policies in India recognized education as a precondition for development and set out three critical issues in those policies - equity, accessibility and quality. In the last twenty years, the educational scenario has seen major changes and new concepts such as rights-based approach to elementary education, student entitlement, and shift in emphasis from literacy and basic education to secondary, higher, technical and professional education, the endeavour to extend universalization to secondary education, reshape the higher education scenario. Recent developments include a new impetus to skill development through vocational education in the context of the emergence of new technologies in a rapidly expanding economy in a globalized environment, need for innovative ways of student financing, addressing challenges of globalization and liberalization, recognition of multi-disciplinary and inter-disciplinary nature of learning and knowledge, efficient use of public resources and encouraging ways of enhancing private investment and funding.

Today, we find that as a result of efforts made during the last few decades, while accessibility, infrastructure and literacy levels have improved significantly, there remains much to be disturbed about when one reflects on the continuing inequity, and the poor quality of education. It will not be an exaggeration to say that our education system is in target less. Various evaluation studies show a decline in learning levels among school students. Teacher vacancies and teacher absenteeism continue to plague government schools in which dropout rates are still high. There is widespread corruption in appointments and transfers of teachers and also in according approval and recognition to educational institutions. Donations have to be paid for several kinds of admissions and are particularly rampant in engineering and medical education. Examination papers are leaked, copying is widespread and mark sheets are often rigged.

There is now recognition that there are several imbalances due to social, gender and regional disparities, which can be remedied through appropriate interventions and a focused strategy. Sustainable development of a nation can be realized only if all sections of the society have equal opportunities and hence the need for a clarion call for multi-pronged, inclusive measures such as provision of educational amenities, student incentives and financing, remedial coaching, special facilities for different disabilities, etc.

Major developments in Information and Communication Technology in recent decades have brought in new dimensions in the fields of transmission of data, and use of ICT as a vehicle for monitoring and management, among others. In the education sector, this is one fundamental change since the previous Education Policy of 1986, vis-à-vis 1992. Many new applications are already in place, as developments in the ICT sector advance rapidly, new opportunities constantly keep emerging, which could be appropriately harnessed and adapted to assist in the field of education.

Fortunately, India is in the way of major transformation. Due to measures taken over the last few decades, the disparities between urban and rural areas in terms of infrastructure and facilities have reduced. Even more significantly, Digital India is being rolled out, and could be soon a reality - every Village Panchayats will be digitally connected and the phenomenon of 'remote' schools will diminish rapidly. This is an unparalleled opportunity which needs to be fully harnessed. The education sector, both school and higher education, can greatly benefit by judicious use of Information Communication Technology (ICT).

Technology alone cannot be the solution to the problem of poor quality of education; the human factor is equally, if not more, important. The Committee recognizes that the teacher is the pivot around which the education system revolves; sadly, we have not succeeded in attracting good students to the teaching profession; added to that, most teacher education courses have little substance. The Committee has made several recommendations to improve the quality of teacher training and education because without good teachers, there can be no quality education.

The focus of the proposed New National Policy on Education is on improving the quality of education and restoring its credibility. It seeks to create conditions to improve the quality of teaching, learning and assessment, and promote transparency in the management of education. The core objectives of education in the coming years should encompass four essential components – i.e. building values, awareness, knowledge and skills. While knowledge and skills are necessarily specific to the objectives of study and largely determined by factors like future employment.

There is no question that the power of computer technology needs to be harnessed to aid the cause of teaching and learning in the field of education. Many experiments have taken place in the past few years, but a clear picture has so far not emerged as to the specific ways in which Information and Communication Technology (ICT) is being utilized in the classroom and elsewhere. The policy makers noted that though MHRD has continuously supported new initiatives and experimentation in this field, but till now it has not adequately implemented. For those reason, the new policy emphasized and suggested to integrate and implement ICT in a variety of ways and means in our education system. Some of the new directions that need to be taken into prior consideration in this regard are discussed below as per the policy guidelines.

Changing role of ICT as aid to teacher in the classroom:

In the past few years, a number of private initiatives have emerged in India, to create video material following the text books in the curriculum of various school boards, or the NCERT suggested texts. Many schools in urban areas already use these aids to the teacher - such use is reported to be increasing particularly in urban schools. In this model, the use of computer is not required by the student, nor even by the teacher, only a video projection or equivalent of text-book material, suitably prepared and adapted, with animation features to make it attractive for young children, is used as a teaching-aid by the teacher in the classroom. So, the policy makers strongly argued that 'a picture is worth a thousand words' – which should make possible to convey simple or even relatively complex concepts and ideas through animation and through pictorial depiction. Therefore it is important to pursue this as a potential instrument to sharply enhance the learning process in the classroom, particularly in the secondary schooling sector.

It is now fairly established that teaching material at the primary and secondary class levels, well prepared, and adapted to local conditions, can act as a powerful tool as aid to the teacher, in enhancing the quality of learning to the student. Experiments, particularly at the primary level have clearly indicated that the teacher cannot be substituted – ICT cannot by itself deliver the necessary instruction material to the student. However, where the teacher is able to use well-prepared material as aid in the classroom for the teaching process, significant improvements in learning ability have been recorded. The members of the policy formulation committee were informed of one such initiative, described below.

The 'Shiksha' experiment

A private foundation has been implementing a project called 'Shiksha', in 340 schools across 244 villages, mostly rural, covering 15,000 students of Grade 1

and 2, in different parts of Uttar Pradesh, for the past two years. An extract from their report was reproduced in the new policy documents as mentioned in below: "SHIKSHA initiative is a unique replicable and scalable program designed to enhance the education standard in primary education (Grade 1 and 2) with high-quality consistent content based on State Board syllabus and a technology-based mode of dissemination to instill learning retention among children. The pedagogy involves teaching with the aid of ICT material, assessment of the student, querying, and augmentation – based on a procedure has been developed. The critical metric of the Shiksha initiative is to ensure that 90% of the students (Grade 1 and 2) under the program retain 90% of the content taught in the classrooms."

The policy makers notes that as Digital India is rolled out, cost of delivery system per classroom likely to decline dramatically, high quality teaching material once prepared, that can be reproduced at nearly no cost. In their report it was clearly mentioned that the above potentially path-breaking initiative, and perhaps other experiments elsewhere in India, will open new vistas for enhancing quality of learning, particularly in lower classes (primary). Further experiments need to be embarked upon to test the methodology, with suitable adaptation, for higher classes, in the secondary level – the efficacy in conveying concepts relating to say physics or mathematics surely should be explored.

Improving remedial teaching learning through using ICT:

Elsewhere, dealing with the school systems, the question of remedial education to help slow learners to come up to the average level of achievement is an important issue. In the context of the RTE Act stipulation of no detention till class VIII, it has become imperative to ensure that the relatively weak learners in each class are appropriately assisted to make up the gaps in their learning, to be generally in line with their cohorts as the schooling years progress.

In most rural areas, as also in urban areas, many parents would not be in a position to support private tuition to bring the child to minimal acceptable levels in each class. It needs also to be explored whether it is possible to arrange for learning modules, appropriately packaged for each subject relating to each class, be web-broadcast to be utilized on call or at specific timings in remote locations, where the student assisted by parents or teacher or on his own can use this additional option for making up for lost learning, and for coming up to minimal levels.

Integrating ICT in the teacher training programmes:

The generally accepted notion is that a child cannot learn, through video modules or through the internet. In many parts of the world interested adults have used these devices to study on their own. The new policy emphasized upon the matter of teacher training particularly to enable them ICT competent to build their everyday classroom lessons. Ministry of HRD has taken several measures to widen the use of ICT in schools, and many of these strategies have already been rolled out. It was suggested that a designated national agency should be encouraged to conduct experiments in this regard, and also monitor various initiatives being taken all over the country. The proposed national agency can also be made responsible for tracking the use of software programmes and suggest improvements where possible.

ICT Modules as Learning Tools in Higher Education:

There is immense possibility of harnessing the power of ICT in teaching learning processes in higher education. In many western systems, even from senior school classes onwards, the basic lecture by the teacher is sent on the internet to be seen at home by the student, to be followed up in the classroom by a discussion, question-answer session and analysis – to sharply enhance the learning experience. This type of innovative guidelines as suggested by the new policy will be played a transforming role in our traditional system of teaching learning.

Revamping the information management system in education:

The Government of India introduced the District Information System for Education (DISE) in 1994, to be implemented by National University of Educational Planning and Administration (NUEPA). With the launch of 'Sarva Shiksha Abhiyan' (SSA) in 2001, the DISE covered the whole country and by 2005-06 nationwide educational data was published. Since then DISE data is now released annually, in both raw and processed form and made available in the public domain. U-DISE is now the 'Official Statistics' and compiler of data, all other parallel connections for information is now discontinued. NUEPA as nodal agency is responsible for data compilation, but their data is forever mentioned with the disclaimer that the 'accuracy and faithfulness' of the data rests with the State or Union Territories concerned. It must be noted that its validity depends on reliability of the information or data being fed into the system. Since less than 10% schools have computers and reliable source of electricity, most of the data are generated manually and collated at block or district level. Compilation of voluminous data manually and collated at the block level is most likely to result in mistakes and inaccuracies, questioning the validity of the data. Thus the reliability of the total data available at the state or national level could be highly questionable, with wide variations among states.

To overcome these practical obstacles the new policy suggested that in the next two to three years all blocks must be covered through fibre-glass broadband network, as per the plans of the Ministry of Telecom, the connectivity will also be extended within a short period to 2.5 lakh Gram Panchayats, with a local Wi-Fi hotspot for exchange of data. In conjunction with a handheld information device

developed in India, with high reliability, it should now be possible in the near future to bring electronic connectivity to every school, however remote. In short technology will be available within 2 years to populate DISE with fairly accurate data without time-lag, and without major manual data compilation, with relative ease and reliability. Preparations need to start without delay to use this opportunity to update the data collection systems on real-time basis. Simultaneously, the policy also noted that the DISE system is now geared only to government schools. It needs to be expanded to include some parts of private educational institutions. That will complete the process of mounting a reliable educational data process.

Implementing ICT as a tool in School Management:

The on-line student management system through ICT might be widened the scope of online registration of students for admission, their examination scores and performance analysis, issue of mark sheets and other certificates, including school leaving certificate and health records. The members of the policy making committee was informed that these measures resulted in increase in enrolment, reduction of drop-out rates, and increase in teaching days due to time saved on admissions and other paper work which teachers are required to do.

The new policy recommended that tools like GIS mapping, ranking of schools according to remoteness and infrastructure or human resource availability should be done for all schools at district level. By recording the particulars of a student from admission until issue of school leaving certificate online, records get built up and provide data for making periodic intervention. It was recommended that the online maintenance of students' records and teacher attendance should become mandatory for all schools. ICT based reporting system need to be converted to become an effective tool for improving school management and school performance. Besides this, the policy also suggested to make it mandatory for such teachers to attend appropriate training programmes in teaching and communication skills, and the use of ICT.

CONCLUSION:

From the above discussion it is now clear that the National Policy on Education, as formulated in 1986 and modified in 1992, had been the guiding document of the policies of the central Government in the education sector for well over two decades. During that period, significant changes have taken place in India and the world at large. New technologies have transformed the way in which we live, work, and communicate, the corpus of knowledge has vastly expanded and become multi-disciplinary. Since the NPE was last reviewed in 1992, there have been momentous changes in the situation in India and worldwide. These need to be taken into account in formulating a new NPE for the coming decades.

While the earlier policy was robust in conception and not delivered the desired results in terms of acceptable outcomes in the education sector. The ground reality today is, depressingly, quite different from what was envisaged in the earlier policies. While gross enrolment in schools, as also at higher education institutions, has gone up sharply, these have been accompanied with many undesirable new factors. While the infrastructure facilities in the school system have significantly improved, there has been little corresponding impact on the quality of instruction or learning. In short, while there has been some improvement in infrastructure, and significant gains in respect of enrolment and access, new challenges about the quality of education have increasingly be devilled the education system.

Simultaneously, Information and Communication Technology (ICT) has made rapid strides in the past couple of decades. New technologies are now available for information dissemination, enhancement of skills of all sorts, not yet suitably adapted to the needs of the education sector. The immense potential for inducting ICT to come to the aid of Indian education in myriad innovative ways has not been harnessed. Many experiments have taken place in the country, and a large body of knowledge has accumulated in this regard. ICT now provides a new and potentially highly effective vehicle for advancing the quality of education at all levels, this issue needs to be seriously explored and the alternatives expounded.

The Government of India has launched several social and developmental initiatives such as Swachh Bharat Abhiyan, Digital India, Skill India, Make in India and Smart Cities. All these initiatives have significant backward and forward linkages with the education sector which need to be taken into account in the new NPE. The rate of change has accelerated. New technologies and disciplines have emerged and new knowledge and insights are being generated at a rapid pace. Social media transmit and disseminate information and opinions almost instantaneously. Individuals, societies, governments and educational and other systems are often behind the curve in keeping pace with these developments.

While 'equity' and 'access' have been, rightly stressed in the past as the guiding principles in the education field, the issue of quality has hitherto effectively been relegated to the background. It has now become an imperative necessity to lay major emphasis on improvement of quality across the states, without compromising on equity and access. In these circumstances the central Government conducted a comprehensive review of the educational scenario of our country and the final outcome of this review process articulated in the new NPE.

In view of the second issue of our discussion, the new policy makers agreed with

the concept that major developments in communication and information technology in recent decades have brought in new dimensions in the fields of transmission of data, use of ICT as a vehicle for monitoring and management, and also to directly assist in enhancing the quality of teaching and learning. New possibilities continually keep emerging, which need to be appropriately harnessed and adapted in the field of education. It should also be noted that this will be an ongoing process, requiring initiatives from all stakeholders to contribute to the quality of education in India.

The policy recommended that, ICT should be made an integral part of school education where it is used as an aid to teachers and students. For this a beginning has to be made in the Teacher Training Colleges. Unless teachers are comfortable using computers and internet, they will find it difficult to use it as a teaching aid, or to guide students on its use. Teachers have to gradually become facilitators and encourage self-learning by students. ICT can no longer be treated as a school subject, it has to become a way of learning process. This field is to be explored seriously and rolled out, in an appropriate manner, synchronizing with the Digital India Programme. ICT needs to be harnessed and adapted in Indian conditions to meet diverse objectives. The potential for application of ICT as an aid of education is immense. So, it was suggested that a designated national agency should be encouraged to conduct experiments in regard to potential use of ICT in the field of education, and also monitor various initiatives being taken all over the country.

India's literacy rate at the time of Independence was just 12%. In the seven decades after independence, India has achieved much. There is now a primary schooling facility in almost every village and the gross enrolment ratio is more than hundred percent. Likewise there has been rapid expansion of secondary and higher education. The education infrastructure has also improved significantly. There has been remarkable improvement in the enrolment of girls, their retention rates, and performance at all levels of education. The literacy rate of India, as per the 2011 census, was 74%. There are however serious concerns about the quality of education at all levels. Surveys conducted by government and private agencies show that students are not achieving the expected levels of learning. In higher education the country does not have any representation in the top 200 universities of the world. Teacher vacancies and teacher absenteeism continue to plague government schools where dropout rates are also high.

Fortunately, India is on the cusp of a major change. Every village is expected to be digitally connected in the next three years. The education sector can greatly benefit by the use of ICT, which now needs to be harnessed for optimal benefits. The focus of the New National Policy on Education is on improving the quality of education and restoring the credibility of the education system. The New NPE seeks to create conditions to improve the quality of teaching, learning and assessment; and promote transparency in the management of education through using ICT. This was the simple message of the National Policy on Education.

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